What is claimed is:

1. A process for correcting a time axis of local chromatographic data to match reference chromatographic data while maintaining peak areas, comprising:

obtaining reference calibration data from a reference chromatographic system;

obtaining local calibration data from a local chromatographic system;

generating local system correction functions based on an appropriate mathematical relationship using the reference calibration and the local calibration data; and

applying the local system correction functions to local chromatographic data to generate corrected local chromatographic data,

wherein the corrected local chromatographic data match with the reference calibration data on time axis and wherein peak areas in the local chromatographic data are maintained in the corrected local chromatographic data.

2. The process of claim 1, wherein the local system correction functions include a smoothed x-axis correction function and a y-axis correction function generated using one or more mathematical curve fitting techniques, said y-axis correction function is a first derivative of the x-axis correction function.

3. The process of claim 2, wherein the one or more mathematical curve fitting techniques are selected from the group consisting of linear regression, polynomial regression, logarithmic regression, cubic splining, and exponential regression.

4. The method of claim 2, wherein the local system correction functions are applied to the local chromatographic data through steps of:

(1) determining a retention time correction (Δrt) from the smoothed x-axis correction function for a given reference retention time (rt);

(2) copying a y value that is at retention time ($rt + \Delta rt$) in the local chromatographic data to rt;

(3) multiplying copied y value by ($1+ d\Delta rt/drt$), wherein $d\Delta rt/drt$ is determined from the first derivative of the smoothed x-axis correction function;

repeating steps (1) to (3) with each retention time data point in the local chromatographic data to create corrected local chromatographic data.

5. The process of claim 1, further comprising:

extrapolating the local system correction functions to extend over a local chromatographic time frame of interest.

6. The process of claim 1, further comprising:

setting up the reference chromatography method in a local chromatographic system.

7. The process of claim 6, further comprising:

locking the local chromatographic system to the reference calibration data with an instrumental correction technique.

8. The process of claim 7, wherein the instrumental correction technique is RTL I method.

9. The process of claim 1, further comprising:

translating the reference chromatographic method into a local chromatographic method using a method translation technique on a local chromatographic system.

10. The process of claim 9, further comprising:

fine tuning the local chromatographic method using an instrumental correction technique.

11. The process of claim 10, wherein the instrumental correction technique is RTL I method.

12. The process of claim 1, further comprising:

replacing an x-axis unit in the reference calibration data, or local calibration data, or both, with a new x-axis unit.

13. The process of claim 12, wherein the new x-axis unit is retention index, boiling point, carbon number, molecular size, or molecular weight.

14. The process of claim 1, further comprising:

replacing an y-axis unit in the reference calibration data, or local calibration data, or both, with a new y-axis unit.

15. The process of claim 14, wherein the new y-axis unit is concentration, percent, weight, mass, moles, or mole fraction.

16. The process of claim 1, further comprising:

applying the local system correction functions to adjust the local calibration data and to generate time-axis correct local calibration data that maintains the peak areas of the local calibration data;

determining a y-axis local system response correction function using the time-axis correct local calibration data and the reference calibration data;

applying the y-axis local system response correction function to the local chromatographic data.

17. The process of claim 1, wherein the reference calibration data is obtained from the reference chromatographic system using an reference chromatographic method and a calibration mix containing at least two calibration compounds, and wherein the local calibration data is obtained on the local chromatography system using the reference chromatographic method and the same calibration mix.

18. A process for correcting local chromatographic data with a reference retention time database, comprising:

providing a reference retention time database;

running a calibration mix on the local system to generate local calibration data;

constructing local system correction functions to minimize differences between the local calibration data and corresponding retention time values in the reference retention time database for the calibration mix;

applying the local system correction functions to adjust local chromatographic data; and

using adjusted local chromatographic data to search the reference retention time database to obtain more accurate search results.

19. The process of claim 18, further comprising:

locking a local system to the reference retention time database using an instrumental method.

20. The process of claim 19, wherein the instrumental method is RTL I method.

21. A process for correcting local chromatographic data by generating a local retention time database from a reference retention time database, comprising:

providing a reference retention time database;

locking a local system to the reference retention time database using an instrumental method;

running a calibration mix on the local system to generate local calibration data;

constructing local system correction functions to minimize differences between the local calibration data and corresponding retention time values in the reference retention time database for the calibration mix;

applying the local system correction functions to adjust the reference retention time database values to generate a local retention time database; and

searching the local retention time database using local chromatographic data.

22. The process of claim 1, wherein generation of the local system correction functions or the corrected local chromatographic data or both is performed at a remote location through a network.

23. The process of claim 22, wherein the network is a local network or the Internet.

24. A process for correcting a time axis of local chromatographic data to match reference chromatographic data while maintaining peak areas, comprising:

obtaining reference calibration data having a first and a last peak from a reference chromatographic system;

obtaining local calibration data having a first and a last peak from a local chromatographic system;

determining an time-axis simple linear function, $x' = mx + b$, that makes retention times of the first and last peak of the local calibration data match retention times of the first and last peak of the reference calibration data;

applying the time-axis simple linear function to the local calibration data to create a time-axis transformed local calibration data;

dividing a y value of each time point in the time-axis transformed local calibration data by m to produce transformed local calibration data with corrected local peak areas;

generating local system correction functions based on an appropriate mathematical relationship using the reference calibration and the transformed local calibration data;

obtaining local chromatographic data,

applying the time-axis simple linear function to local chromatographic data to create a time-axis transformed local chromatographic data;

dividing a y value of each time point in the time-axis transformed local chromatographic data by m to produce transformed local chromatographic data with corrected local peak areas; and

applying the local system correction functions to the transformed local chromatographic data to generate corrected local chromatographic data,

wherein the corrected local chromatographic data match with the reference calibration data on time axis and wherein peak areas in the local chromatographic data are maintained in the corrected local chromatographic data.

25. An chromatographic apparatus for analyzing samples, comprising:

means for producing local chromatographic data; and

means for generating corrected local chromatographic data that match with reference chromatographić data on a time axis while maintaining peak areas of the local chromatographic data, comprising:

means for creating local system correction functions based on an appropriate mathematical relationship using reference calibration data and local calibration data; and

means for applying the local system correction functions to local chromatographic data.

26. The chromatographic apparatus of claim 25, wherein the means for generating corrected local chromatographic data further comprising:

means for replacing an x-axis unit in the reference calibration data, or local calibration data, or both, with a new x-axis unit.

27. The chromatographic apparatus of claim 25, wherein the means for generating corrected local chromatographic data further comprising:

means for replacing a y-axis unit in the reference calibration data, or local calibration data, or both, with a new y-axis unit.

28. The chromatographic apparatus of claim 25, wherein the means for generating corrected local chromatographic data further comprising:

means for determining a y-axis local system response correction function; and

means for applying the y-axis local system response correction function to the local chromatographic data.